Iowa Soybean Association Environmental Program and Services

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DON WILLIAMS LAKE WATERSHED
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BOONE, IOWA

Environmental Programs & Services
IOWA SOYBEAN ASSOCIATION

Iowa Soybean Association
Environmental Programs and Services

- *Advance agricultural leadership for environmental quality by developing, applying, and promoting programs that assist producers to perform agronomically and economically*
- Develops policies and programs that help farmers expand profit opportunities while promoting environmentally sensitive production using the soybean checkoff and other resources.
- The Association is governed by an elected volunteer board of 21 farmers.
- Largest State-based row commodity association in U.S. serving 45,000 Iowa soybean farmers.

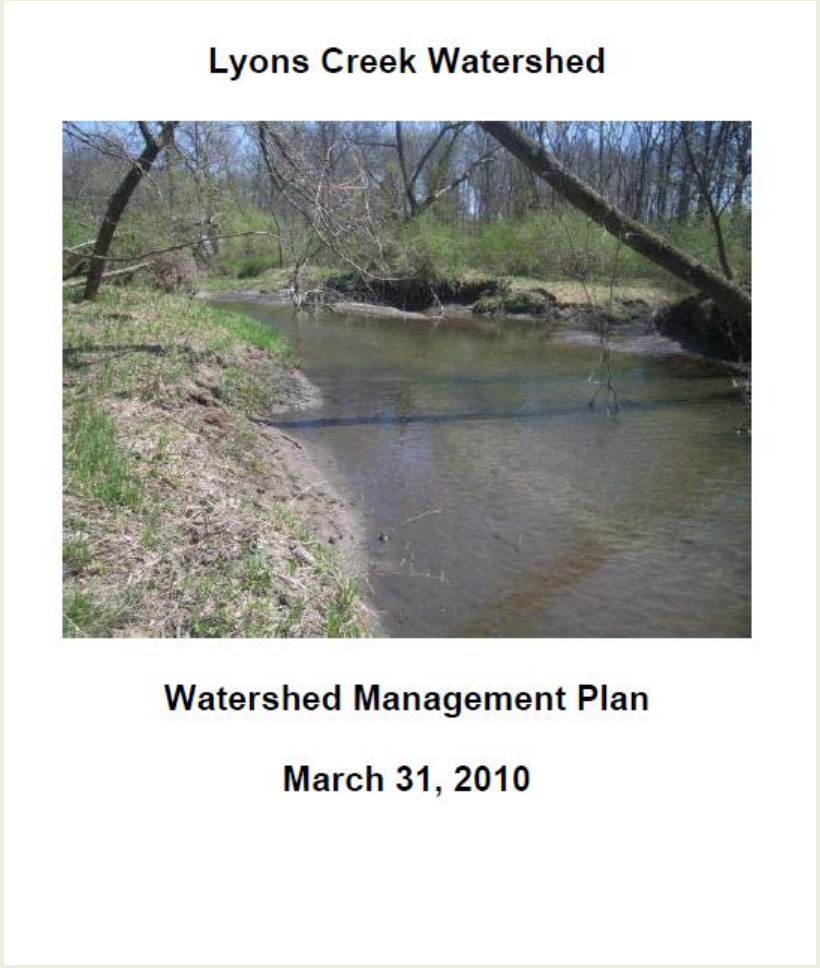
ISA Watershed Program

Elements:

- Multi-scale watershed assessment and planning facilitation
- CEMSA planning with groups of farmers
- Management Evaluation – Groups / Replicated Strips Trials/Stalk sampling
- Environmental evaluation via water monitoring
- Targeted Conservation Systems – Bioreactor, Shallow Wetland, others
- Technical Service Contracts – ACWA / DMWW / TNC / ISU / Prairie River and Prairie Winds RC&D's

Watershed Planning

- A comprehensive plan for the watershed
  - Locally-led; community-based approach
  - Inventories currently available
  - Identifies water quality concerns
  - Goals and objectives
  - Outlines resources and partners available
  - Provides guidance on steps needed to address the concerns
- Set of integrated solutions; no silver bullet
- Infield/Edge of Field
- BMP practice list
- Implementation



Components of a Watershed Management Plan

- Community based planning effort
  - Vision Statement
  - Public Outreach
- Watershed Characteristics
- Impairments/Pollutants
  - 2005 TMDL; organic enrichment (phosphorus) & siltation
- Pollutant Data Analysis
- Watershed Assessments
  - Stream (RASCAL); Land Use; Gully
- Goals and Objectives *(identify solutions; assess strategies)*
- Monitoring Plans
- Implementation Schedules
- Resource Needs

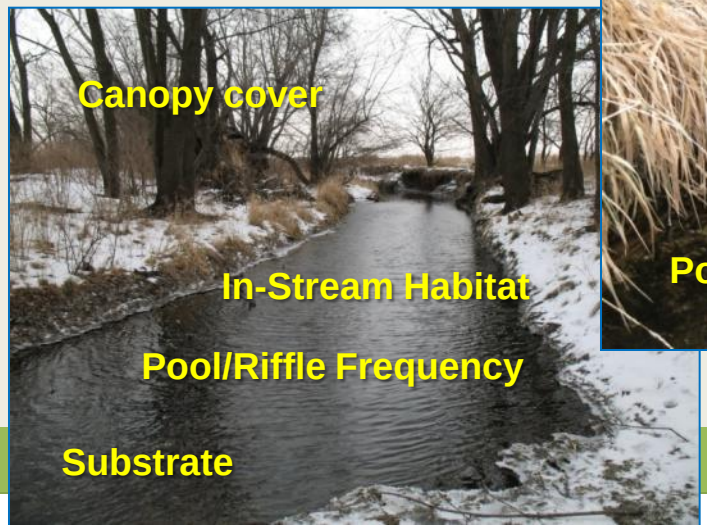
Watershed Management Plan

- Building partnerships
  - Divergent interests
  - Community based planning approach
- Goals & Objectives
  - Develop management objectives and strategies
  - Assess strategies to meet identified goals
- Education/Outreach
  - Outreach component
  - Citizens guide – help summarize watershed management plan
- Sustainable Implementation Program
  - Implementation schedule to meet multiple objectives
  - Economically and environmentally sustainable
- Implement Watershed Plan
  - Carry out plan over long term (5, 10, 20 years)
  - Continued work with stakeholders
  - Identifying funding opportunities; staffing
- Measure Program Success; Make Adjustments

Rapid Assessment of Stream Conditions Along Length (RASCAL)

- Assess in-stream & near-stream conditions; use GPS technology to provide continuous stream condition data for watershed

- Results are intended to assist watershed groups identify priority areas for targeted conservation practices / BMPs.
- Land use assessment – help target upland BMPs.



Legend

- Watershed
- County Boundary

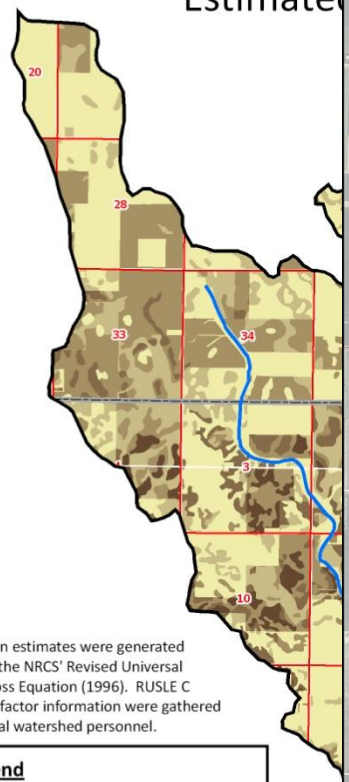
Land Use Category	Acres
Corn, No Till	898.7
Corn, Mulch Till	10,077.1
Corn, Conventional Till	172.2
Soybeans, No Till	1,073.5
Soybeans, Mulch Till	5,892.9
Soybeans, Conventional Till	48.3
Alfalfa	27.8
CRP	661.2
Oats	75.0
Grassland	459.1
Pasture	210.6
Timber	6.9
Grazed Timber	30.4
Shrub/Scrub	9.0
Farmstead Abandon	46.9
Farmstead Active	289.7
Urban/Residential	25.7
Wetland	15.0
No Data (i.e. Road, lake)	124.4

Total: 20,144.3

0 0.25 0.5 1 1.5 2 M

Don Will

Estimate



Erosion estimates were generated using the NRCS' Revised Universal Soil Loss Equation (1996). RUSLE C and P factor information were gathered by local watershed personnel.

Legend

- Watershed Boundary
- Webster/Boone County Line
- Section
- Waterbody
- Streams
- Terraces

RUSLE (T/A/Y)

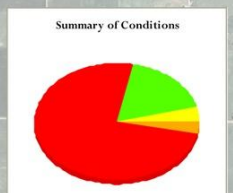
- 0 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- 2.0 - 5.0
- 5.0 - 24.0

N

0 0.3 0.6 1.2 Miles

Stream Assessment for Don Williams Lake - Boone County

Bank Erosional Patterns



Legend

Bank Erosional Pattern

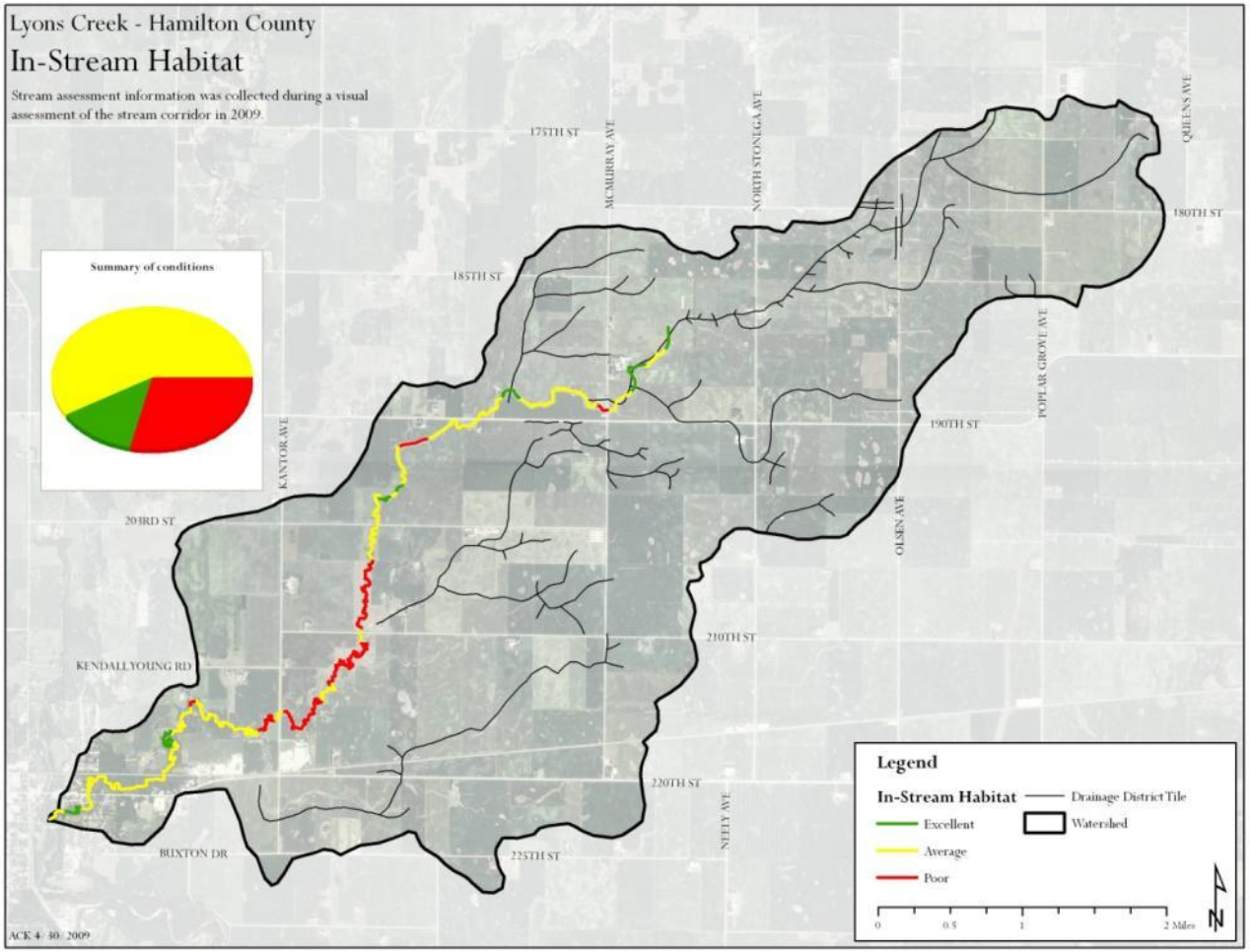
- None
- Random
- Alternate Banks
- Both Banks
- Watershed
- County Boundary

N

0 1 2 Mile

ABA 6/14/10

RASCAL Assessments – *Lyons Creek*



Survey Parameter	Categories				
Adjacent Land Cover	Row Crop	Trees	Grass	Pasture	Residential
	38.3%	14.5%	5.1%	35.0%	9.1%
Riparian Zone Width	< 10 ft	10 - 30 ft	30 – 60 ft	> 60 ft	
	36.4%	11.7%	24.4%	28.6%	
Bank Stability	Stable	Mod. Stable	Mod. Unstable	Unstable	
	6.3%	34.2%	26.8%	32.7%	
Substrate	Boulder	Cobble	Gravel	Sand	Silt/Mud
	0.6%	15.0%	20.5%	55.4%	8.5%
Stream Habitat	Poor	Average	Excellent		
	28.6%	58.7%	12.7%		

Lyons Creek Watershed Management Plan

Table 28 Nutrient reduction for conservation practices based on available nutrients.

Practice	Expected reduction
Nitrification inhibitors	10%
Spring vs. Fall fertilization	20%
Cover Crops	50%
Water Table management	40%
Shallow or Wide Tiles	25%
Conversion to CRP	95%
Conversion to Perennial Crops	80%
Constructed Wetlands	50%
Bio-reactors	40%
Pasture management	20%
Riparian buffers/waterways	25%
Conservation Tillage	5%
Drainage mgmt	20%

Table 26 Potential best management practices.

	NRCS Practice Code
Nutrient management	590
Residue & Tillage Mgmt, Ridge-till	346
Residue & Tillage Mgmt, No-till Strip-Till	329
Grassed Waterways	412
Filter Strip *(could be enrolled under CRP)*	393
Riparian Forest *(could be enrolled under CRP)*	391
Water and Sediment Control Basin	638
Cover crops	340
Bio-reactor	747
Wetland restoration	657
Prescribed Grazing	528
Fence	382
Stream Crossing	578
Watering Facility	614
Stream bank & Shoreline Protection	580
In-stream structures *(for habitat; water quality)*	xxx

Top resource concern – *Water Quality*

- *Nitrate*
- *Sediment*
- *Bacteria*

Thank You

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